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THE PLANT DISEASE REPORTER

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Volume X **Number 4**

August 1, 1926

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

Issued by

THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

Volume X August 1, 1926 Number 4

ALFALFA DISEASES IN KANSAS

Alfalfa Nematode Found in State

Nematode (Tylenchus dipsaci)

"Found by J. L. Weimer in two fields in Lyons County where it was doing considerable damage. This is the first report in Kansas since the establishment of the Plant Disease Survey. It was reported some 20 years ago by entomologists."

Wilt

"Very prevalent in first crop. Found in fields of all ages, i. e., over one year old. Indications are that much of the dying out and complainton the part of farmers that alfalfa fields are poor, is due to the wilt. The disease has been located in all counties growing alfalfa. There are other root diseases which may be easily confused with wilt. These, no doubt, are occurring in other states."

Crownrot (Non-par.)

"A crown injury was reported to the Plant Disease Survey in 1925 by the writer. It was especially conspicuous on young plantings. It was thought to be of a non-parasitic nature and was found to be distinct from Jones' bacterial wilt. J. L. Weimer, stationed in Kansas, will proceed in the study of this problem. Alfalfa plants of all ages were found this year to be dying from this 'Crown rot.' It apparently is related to winter injury. It is as common and destructive as alfalfa wilt."

Downy mildew (Peronospora trifoliorum)

"More common than usual, being found in fields of all ages and not confined to young fields. No appreciable damage."

Leaf blotch (Pyronopeziza medicaginis)

"A few reports made. Not common, chiefly on account of lack of rain."

L. E. Melchers, July 15.

OZONIUM ROOTROT DESTRUCTIVE TO ALFALFA IN ARIZONA

"Common and destructive to the stands of older alfalfa during the third and fourth cuttings. One field planted only last fall already has 20 per cent reduction of stand with the disease (Ozonium omnivorum) still spreading. Occurs mainly on the farms bordering the Verde River. This disease is only occasionally found in fields in the higher mountainous regions." (Brisley, July 14)

NOTES ON CLOVER POWDERY MILDEW (ERYSIPHE POLYGONI)

Georgia (Spalding County): Formerly almost constantly present on all clover plants here, has to date been found on only a single volunteer plant growing in a rather moist situation. (Higgins, July 16)

North Carolina: Very little powdery mildew of clover has appeared this season up to the present time, which is well after the first cutting of clover. The crop has been damaged very little if any by this disease. (Fant, July 7)

Missouri: (Livingston, Caldwell, and Clinton Counties) Red clover fields are rather heavily infected with powdery mildew despite the dry season. (Archer, June 28)

Oregon: Very general development of mildew which has appeared throughout the state during the past 2 years is again becoming abundant at this time. A marked difference in different seed strains and in individual plants is noticeable. (Barss, July 15)

TYLENCHUS DIPSACI FOUND ON CLOVER AND GARLIC IN CALIFORNIA

Specimens of clover and garlic infested with the stem nematode have been received recently from C. E. Scott of the California State Department of Agriculture at Sacramento. The infested clover was found in an alfalfa field in Humboldt County, September 16, 1925. This field is about 20 miles

from the nearest known infested field of alfalfa. This report with specimens to the Plant Disease Survey is the first that we have received of the occurrence of Tylenchus dipsaci on clover in California. The other states from which it has been reported on clover are Oregon, Washington, Idaho, and Utah.

Regarding the occurrence of nematode on garlic Mr. Scott writes as follows:

> "The specimens were collected in San Benito County, June 29, 1926. The disease was first found in 1925 in San Benito, Monterey, and Santa Cruz Counties. In 1925 the disease spread rapidly whenever it appeared in a field. This year, due to the dry season, there has been but little direct injury in any field in the three counties. In practically every case (in 1926) we have traced the origin of the disease to diseased seed or planting on infested land. The situation is now being handled by certification of all seed (cloves for planting) garlic.
>
> "The appearance of the disease in garlic is not as definite as in narcissus. The plants are stunted and dry down prematurely. Thickening of the neck above the bulb is the most characteristic symptom. The nematodes are found in great numbers in the root base and in the sheaths. The inspectors check all determinations by microscopical examinations of these tissues."

The determination of the organism was verified in each case in the Office of Nematology.

STEM RUST OF CEREALS

In general, collaborators' reports concerning the stem rust situation with regard to wheat and oats agree with the statement in the Rust Reporter for July 15. The disease seems to be rare or unimportant on rye and barley in most cases.

The statement from the Rust Reporter is as follows:

> "The rust situation past, present, and future seems to be about as follows. There was a great deal of stem rust in the wheat-growing regions of Mexico. The uredinial stage overwintered the first time in several years at Denton, Texas, and probably in other localities in that general region. Stem rust of wheat was moderately heavy in northern Texas but it evidently did not spread much in Oklahoma. In Kansas and Missouri there was a light to moderate trace in most fields by June 20. Owing to the drought in certain

sections of Kansas, the rust did not develop much, and very little damage was done either in Kansas or Missouri.

"In general the same thing seems to be true of Nebraska. There was comparatively little rust in South Dakota and most of southern Minnesota, although there was considerable local variation. In North Dakota, the Red River Valley of Minnesota, and in southern Manitoba, there is some rust in practically all fields. About July 1 Butler found a few localities in which there were fairly numerous infection centers, and there seemed to be a possibility that the rust could do some damage. Recently Rodenhiser and Stakman observed fields between the Twin Cities of Minnesota and Fargo, North Dakota. There was some rust in practically every field visited. However, there was a great deal of local variation, due probably in considerable measure to local variation in rainfall. There also was quite a little variation on account of varietal differences.

"Wheat rust did very little damage in Texas, Oklahoma, Kansas, Missouri, Nebraska, South Dakota, and southern Minnesota. While the wheat is not yet cut in South Dakota and southern Minnesota, it does not seem that the rust can do very much damage except locally. There are some places where there are heavy local epidemics near barberries, and some in which the rust has not been traced to barberry bushes. This much, however, is certain. Wherever there are barberry bushes the rust is exceptionally heavy. Whether a general epidemic will develop in the Red River Valley of Minnesota and North Dakota and in southern Canada and in certain other localities of North Dakota and Minnesota depends upon the weather between now and harvest. The rust is very much later in most places than it was last year. In most regions the weather has not been as favorable for the development of rust as it was last year, and it seems quite likely that drought will do more damage than rust.

"There is an unusual epidemic of stem rust of oats. Even in wheat fields in which there is a great deal of wild oats the rust is heavier on the wild oats than it is on the wheat. Where this rust came from it is difficult to say. There was an unusual amount of stem rust on oats in Texas and Oklahoma this year, but there also was a tremendous amount of crown rust. We have an epidemic of stem rust, but there is very little crown rust in the North. If the stem rust was blown up from the South, it is difficult to understand why crown rust did not come also. This problem requires further study."

The reports received are given below.

Winter wheat

Pennsylvania: Due to the dry spring this rust did not appear on the common barberry until very late (first observed June 2). It was found in only three wheat fields. On June 25 it was observed to be causing considerable damage to two wheat fields near infected barberry in Cumberland County and on July 9 a trace of the rust was found in a wheat field in Northumberland County. (Kirby, July 15)

Ohio: Quite general, but not severe. Will cause very little loss. (H. C. Young, July 15)

Wisconsin: Less than usual. Held in check by drought. (Vaughan, July 15)

Minnesota: Generally distributed, but very little damage done. (Sect. Plant Path., July 15)

Iowa: Wheat which is being cut in the central and southern part of the state matured with only a trace of stem rust. (M. A. Smith, July 6 in Cereal Courier, July 10)

North Dakota: The first traces of stem rust in winter wheat were observed June 11. Since this date the infection has spread somewhat but is still confined mostly to the leaves and leaf sheath. (Brentzel, July 15)

South Dakota: Five to 10 per cent. Very short crop. (Evans, July 15)

Nebraska: Rather rare to trace. Absolutely no loss. (Peltier, July 15

Kansas: There was practically no stem rust in Kansas in 1926. A small amount was found at Columbus, Kansas, June 7. A few pustules were found in fields in Dickinson, Saline, McPherson, Reno,and Stafford Counties on June 25 and 26. These only on late green plants, rest of wheat ready for harvest at the time. No rust in northwest. (Johnston, July 15)

Colorado: Up to date this rust has not yet been found on winter wheat in Colorado. (Learn, July 15)

Arizona: Though present each year in this region (northern Arizona), this is the first year in six that the disease has produced conspicuous discoloration and reduction in yield of wheat. All fields were severely affected during the latter stages of growth. (Brisley, July 14)

Stem rust has been very prevalent in southern Arizona this year on all varieties of wheat including Early Baart, Sonora, Australian Club. The abnormal moisture during late spring and early summer has been the main climatic factor concerned. (Brown, July 12)

Rye

Connecticut: Failed to find a single case in any of the fields examined. (Clinton, July 15)

Minnesota: Only traces of stem rust have been found on rye and those were near barberries. (Sect. Plant Path., July 15)

North Dakota: To date no infection has been observed on rye. (Brentzel, July 15)

Nebraska: Not found. (Peltier, July 15)

Colorado: The rye is ripe and being cut in several places. We looked very hard for stem rust but could not find any. (Lungren, June 29)

Barley:

Iowa: Barley, which ordinarily rusts more heavily than either wheat or oats in Iowa, is remarkably free from stem rust this year. Only a trace has been found in the fields examined. Barley is in the hard dough stage now. (M. A. Smith, July 6)

South Dakota: Three to 5 per cent rust. Barley poor in most places. (Evans, July 15)

Nebraska: Rare to trace. (Peltier, July 15)

Arizona: Infection scattered throughout Maricopa and Yuma Counties. Damage not great as most of the grain was well filled before rust became abundant. Certain late plantings suffered considerable loss. (Streets, June 15)

Oats:

Arkansas: More abundant than usual but not causing any serious damage. (Rosen, July 15)

Iowa: Early oats are maturing with only a trace of stem rust. (M. A. Smith, July 6: Cereal Courier 18: 155. July 10)

South Dakota: The first stem rust on oats was found two weeks later (about July 1). Since then rust has appeared in nearly every field. (Evans, July 1)

Nebraska: Rare to trace. (Peltier, July 15)

Kansas: Only traces, no damage. Dry season held rust in check. (Melchers, July 15)

Arizona: Infection scattered through Maricopa and Yuma Counties. Damage slight, due to advanced stage of host and use of oats for hay. (Streets, June 15)

Washington: On my recent visit to Skagit County we made a survey of Beaver Marsh, where we found and destroyed 15 barberry bushes. In this locality we found that rust was so heavy that a number of farmers were not planting oats this year. As we went north and west toward the ocean we found that the rust became much less prevalent. (G. L. Zundel, June 14 in Cereal Courier 18: 150. July 10)

Oregon: Found in small amounts in western Oregon causing no damage. (Barss, July 15)

LEAF RUSTS OF CEREALS

Winter wheat - Puccinia triticina

The following report from the Cereal Courier for July 10 summarizes the occurrence of leaf rust in Kansas, Oklahoma, and Texas.

"The spring of 1926 was one of extremes in leaf rust infection in different parts of the southwest. An extremely heavy infection occurred in nursery seedings at Denton, Texas. Northern Texas and southern Oklahoma experienced generally heavy infections. The amount of rust gradually diminished to the northward. Northern Oklahoma and southern Kansas had a moderate amount of leaf rust early in the season, but very dry weather ripened the wheat early and prevented any material increase. Eastern, northern and northwestern Kansas had very light infections of leaf rust, which came in very late. Central Kansas had a moderate amount of rust, which came in very late but increased rapidly until hot dry weather ripened the wheat. Wheat in all sections of Kansas ripened at about the same time owing to dry weather. Much of the wheat did not ripen normally. (C. C. Johnston, June 30: Cereal Courier 18: 159, July 10)

Other reports are as follows.

Pennsylvania: Due to very dry weather during April and May this rust did not appear until very late. There apparently will be about 15 to 25 per cent of this rust present and the loss will be comparatively small. (Kirby, July 15)

Minnesota: First observed June 9 in Waseca County. Very common but apparently very little damage done. (Sect. Plant Path., July 15)

North Dakota: Leaves are red with rust in some fields. (Brentzel, July 15)

South Dakota: Widespread; 5 to 10 per cent. (Evans, July 15)

Nebraska: Trace. (Peltier, July 15)

Kansas: Leaf rust developed very late in the season in Kansas and wheat ripened unusually early. Southern Kansas had a rather heavy infection (av. about 40 per cent). Southeastern part of state had very little rust which came very late (trace to 10 per cent). Northeastern had a moderate amount of late infection. Central part of state had a rather heavy infection which came very late (av. about 60 per cent). North central

had a light infection which developed early but progressed very slowly. Northwest had practically no rust. (Johnston, July 15)

Colorado: Leaf rust is quite prevalent over all the winter wheat growing sections in the state. Have no data as to severity in any case. (Learn, July 1)

Oregon: Severe and widespread attack reported throughout western Oregon. Considerable yield reduction probable. (Barss, July 15)

Rye - Puccinia dispersa

Connecticut: In 8 fields examined in 6 different towns, found rust on leaves in all in moderation. Where plants had remained green longest and especially in shade, rust was evident but in no case did much damage result. (Clinton, July 15)

Virginia: Considered unusually severe in the Eastern Shore section during 1926. Rye is now extensively grown as a cover crop. (McWhorter)

Kentucky: Slight amount present on June 13. (Valleau, June 15)

Minnesota: First observed June 9 in Waseca County. Quite generally present, but unusually light infections. Not much damage. (Sect. Plant Path., July 15)

Nebraska: Not found. (Peltier, July 15)

Colorado: The rye is ripe and being cut in several places. Only a trace of leaf rust was found here. (Lungren, June 29)

Oregon: Found in plots on O. A. C. Farm at Corvallis. (Barss, July 15)

Barley - Puccinia anomala

South Dakota: Prevalent; 3 to 10 per cent. (Evans, July 15)

Nebraska: Not found. Only once (1923) in six years. (Peltier, July 15)

Arizona: Prevalent in Yuma County, and quite severe on the later plantings. Not abundant or severe in Maricopa County. (Streets, June 15)

Oregon: Common and much more abundant than usual in western Oregon. (Barss, July 15)

Oats - Puccinia coronata

Mississippi: Severe throughout the state. (Wedgworth, July 1)

Texas: Very prevalent. (Taubenhaus, July 1)

Arkansas: Common and more prevalent than last year, but not as serious as in average years. (Rosen, July 15)

Nebraska: Rare to trace. (Peltier, July 15)

Kansas: Practically absent - too dry. Oats headed very short all over the state. Quality good, however. (Melchers, July 15)

Arizona: A few scattered infections in Maricopa County. Damage slight. (Streets, June 15)

Oregon: Unusually severe in coast sections. Occasionally found in small amounts in Willamette Valley. (Barss, July 15)

California: Very prevalent this year, much more so than usual but not doing very much damage. (Mackie, May 25)

PUCCINIA GRAMINIS POAE FOUND IN VIRGINIA

According to the Rust Reporter for July 15, Puccinia graminis poae was found at Blacksburg, Va., on Poa ~~compressa~~ near infected Berberis canadensis. This is the first known occurrence of this rust in Virginia, it having previously been found in only two other states, Indiana and Michigan (Stakman, E. C., and M. N. Levine. Puccinia graminis poae Erikss. and Henn. in the United States. Jour. Agr. Res. 28: 541-548. 1924.). This year an infection of Poa pratensis directly beneath rusted barberries was noted in Hamilton County, Indiana, also according to the Rust Reporter.

OAT SMUT

Delaware: Crop very short because of drouth. Very little smut found in the crop this season. (Adams, July 15)

Virginia: The two smuts are present in the normal amounts. No other disease of consequence noted. (Fromme, July 15)

Arkansas: Ustilago avenae less common than usual. U. levis quite rare this year. (Rosen, July 15)

Missouri: (Livingston, Caldwell, and Clinton Counties) Loose smut rather abundant on susceptible varieties. The great majority of fields, however, contained Fulghum oats, which are supposed to be very resistant to smut. (Archer, June 28)

Nebraska: Light infections of oat smut have been noticed. (Sprague, Cereal Courier 18: 135. June 20)
About as usual. (Peltier, July 15)

Kansas: Both loose and covered smut occurs on susceptible varieties. Kanota, a Fulghum oat, has gained favor in Kansas. Probably 75 per cent of the acreage will be planted to this variety next year. It is very resistant to both smuts. (Melchers, July 15)

Colorado: Loose smut present over the oat growing section but not at all severe. Covered smut is about as prevalent as the loose smut but no heavy percentage of infection has been reported. (Learn, July 15)

Washington: Fairly common both east and west of the Cascades. (Dept. Plant Path., July 15)

Oregon: Present in apparently usual amounts. (Barss, July 15)

REPORTS ON HALO BLIGHT OF OATS

Collaborators in Arkansas, Missouri, and Kansas report more or less of the halo blight of oats caused by Bacterium coronafaciens. In general, comparatively little damage seemed to result although in Missouri severe damage was noted in a few fields in Livingston County.

BACTERIAL BLOTCH OF OATS CAUSED BY PSEUDOMONAS SP.

H. R. Rosen of Arkansas Experiment Station has reported recently on this new bacterial leafspot of oats which resembles to some extent the halo blight and which perhaps is being confused with it. Regarding it he states:

"Much more common than halo blight. Quite prevalent on spring oats. Cultural tests indicate that the organism is closely related to the one causing halo blight, but as previously reported, no halos are produced, while the organism isolated from halo spots produces typical halo blight on the same oat variety." (July 15)

STEM SMUT OF RYE CAUSED BY UROCYSTIS OCCULTA

Connecticut: Found one field where this smut had infected 2 to 4 per cent of the culms and was causing that amount of injury. This is the worst case we have ever seen. The smut has only been reported two or three times previously from this state. (Clinton, July 13)

Pennsylvania: Two fields inspected showed 1 per cent. Collected at Chambersburg, June 28. (Kirby, June 28)

Minnesota: First observed May 26 at University Farm. Quite generally present in the rye-growing region. (Sect. Plant Path., July 15)

NOTES ON THE PREVALENCE OF SCAB OF WINTER WHEAT

Pennsylvania: Wheat scab (*Gibberella saubinetii*) will apparently be of only minor importance this year. Only small amounts occurred in most fields with the percentage of infected heads rarely exceeding 5 per cent. (Kirby, July 15)

Ohio: Scab continues to be very prevalent and causing loss in wheat planted after corn. (H. C. Young, July 15)

Minnesota: First observed June 12 in Meeker County. Very little scab has been observed on winter wheat this year. (Sect. Plant Path., July 15)

Colorado: We found some wheat scab in northern Weld County, only a trace. (Lungren, June 29).

This disease has been reported as being present near Ft. Collins. Severity has not yet been noted. (Learn, July 1)

GLUME BLOTCH OF WINTER WHEAT

Pennsylvania: Glume blotch (*Septoria nodorum*) was more prevalent than in 1926, and it was observed to be shriveling the kernels in the infected spikelets to a greater extent than usual. From 10 to 40 per cent of the spikelets were usually found to be infected. (Kirby, July 15)

Ohio: This disease is quite general in northern Ohio and is causing quite a distinct loss and in some of the fields in which we have made definite counts it will cause a reduction in yield of about 12 per cent. (H. C. Young, July 15)

Illinois: *Septoria nodorum*, hitherto known in Illinois only as the cause of rare cases of glume blotch, has been found recently in Schuyler and McDonough Counties in considerable abundance on several varieties of wheat where it was attacking the topmost nodes of the culms. The wheat there is now cut and the

heads on diseased stalks generally show poorer grain and fewer filled spikelets. This is the first time in our five years' of survey that we have observed this condition. (Tehon, July 27)

NOTES ON THE PREVALENCE OF BUNT OF WINTER WHEAT

Pennsylvania: Stinking smut (Tilletia laevis) has apparently doubled in amount since 1925. The increase in severity of the smut is due to the very dry fall which kept the farmers from planting their wheat until the October wet rainy period. The result was that much of the wheat was very slow in coming up and went into the winter in a very poor condition. Copper carbonate treatment of the seed controlled the smut except where the growers treated heavily infected wheat from which the smut balls had not been removed.

Stinking smut has doubled in severity during each of the past three to five years. This is apparently due to the farmers planting their wheat later and later to avoid the Hessian fly.

The ten highest percentages of stinking smut found in individual fields were as follows: 75, 59, 54, 51, 43, 42, 41, 37, 35, 34.5. (Kirby, July 15)

Ohio: There is about the usual amount of this disease present this year. It is pretty well distributed throughout our wheat sections and is causing some loss. Our seed treatment of copper carbonate, however, is taking care of it wherever it is applied. (H. C. Young, July 15)

Wisconsin: No bunt seen or reported to date. (Vaughan, July 15)

South Dakota: None found this year. (Evans, July 15)

Nebraska: About as usual. (Peltier, July 15)

Kansas: Somewhat early to estimate the loss, but it will be large. Reports are coming in that fields are showing as high as 80 per cent. Copper carbonate treated fields are as a whole showing good results. Seed black with smut when treated with Cu CO_3 does not give complete control. Formaldehyde is the only treatment which will handle such infection. The 18 to 20 per cent brands when used at 2-ounce rates will not give as good control as the 50 per cent brands. (Melchers, July 15)

Colorado: This disease is somewhat prevalent over the winter wheat growing area. The percentage infection varies from a trace to 35 per cent. A survey made by Lungren and LeClerg found the greatest percentage infection, 35 per cent, south of Sterling, and less from there east to the Kansas line. (Learn, July 15)

Washington: Generally prevalent but below the amount of some years. (Dept. Plant Path., July 15)

Oregon: Present as usual. (Barss, July 15)

LOOSE SMUT OF WINTER WHEAT

Pennsylvania: Loose smut (Ustilago tritici) seems to be present in slightly higher amounts than in 1925. There was more smut in the supposedly resistant variety Leap than heretofore observed. Amount present in certain counties:

County	Number of fields surveyed	Average per cent of smut
Venango	21	1
Lancaster	17	.72
Northumberland	16	2.8
Lebanon	8	2.37
Cumberland	25	1.37
Dauphin	10	.5
Northampton	35	2.1
Clinton	17	1.3
Lehigh	12	5.45
Blair	28	2.5
Snyder	5	3.6
Delaware	18	.7
Franklin	9	3.3

(Kirby, July 15)

Delaware: Showing up very prevalent during last of May (26). No evidence of increase over last year. (Adams, July 1)

Virginia: Occurrence is about as usual. Generally prevalent in fields of bearded wheat with average percentage of infection of about 3. (Fromme, July 1)

Arkansas: Rather common and appears to be source of considerable loss. (Dept. Plant Path. June 15)

Ohio: This disease seems to be considerably less this year than in previous years. (H. C. Young, July 15)

Wisconsin: Traces only. (Vaughan, July 15)

Minnesota: Generally distributed throughout the winter wheat region, averaging about one-half to 1 per cent infection. (Sect. Plant Path., July 15)

Missouri: (Livingston, Caldwell, and Clinton Counties) Only three wheat fields of consequence found. Loose smut was found in all fields (1 to 5 per cent). (Archer, June 28)

North Dakota: Common in many fields of spring wheat since July 1. (Brentzel, July 1)

South Dakota: Some in nearly all fields; 15 per cent in one field examined near Reliance. (Evans, July 15)

Nebraska: About as usual. (Peltier, July 15)

Kansas: Somewhat less than usual in hard wheats. Not over one-eighth per cent. More loose smut occurs in northeastern Kansas in Harvest Queen than bunt. Fields show from 3 to 12 per cent. (Melchers, July 15)

Colorado: I also found considerable loose smut in all the fields examined on the western slope. More than bunt, however, we could expect that due to the fact that most of the farmers treated in that section with copper carbonate. I have found very little bunt in the spring wheat fields and have examined treated and nontreated fields. (Lungren, July 18)

Arizona: Prevalence and losses about same as last year. One field of 40 acres, Early Baart wheat showed one-half per cent smutted heads. This is about the average. (Streets, June 15)

RUST OF FIBER FLAX PREVALENT IN MARION COUNTY, OREGON

"In a survey conducted by E. N. Bressman of the Department of Farm Crops, Oregon Agricultural College, covering 8 fields of fiber flax totalling about 250 acres in Marion County near Aumsville, flax rust (Melampsora lini) showed up in every field. In some as high as 100 per cent of the stalks showed damage and in others as little as 5 to 10 per cent, according to Mr. Bressman." (Barss, July 1)

SCAB OF COWPEA REPORTED FROM ALABAMA

On July 26 specimens of pods of California Blackeye cowpea affected with Cladosporium vignae Gardner were received. These were collected by S. A. Wingard in Montgomery County, Alabama, July 13. On July 28 more specimens of infected pods were received from L. E. Miles of the Alabama Experiment Station. Concerning the situation Wingard wrote as follows:

> The Black-eye variety showed 100 per cent infection on pods, stems, and leaves, many of the young pods being completely destroyed before any seed were formed. Other varieties of cowpeas growing in other parts of the same field showed no infection. Although only one field was observed I was told that infection was

general on Black-eye varieties in the vicinity of Grady. The rainfall for this section of Alabama was very heavy and no doubt accounts for this severe scab infection."

BACTERIAL SPOT OF PEACH

On July 16 Dr. B. B. Higgins of the Agricultural Experiment Station, Experiment, Georgia sent in the following interesting report concerning an outbreak of Bacterium pruni on peach in Spalding County, Ga.

"Bacterial spot (Bacterium pruni) is much more serious than ever before noted in this county. Some defoliation has occurred in nearly all orchards and some orchards show practically 100 per cent infection of the fruit.

"Most of these orchards have received good cultivation and fertilization. The vigor of the trees may have been reduced to some extent by the drought of last year, but they have made good growth this year. Most of the orchards received a dormant spray of miscible oil without a fungicide, three applications of dust (85 pounds sulfur, 15 pounds lime, and 5 pounds arsenate of lead) one spraying with lime sulfur the latter part of May followed by another dust application.

"During the night of May 10 a rainstorm occurred in this region and was accompanied by high wind from the northwest. Soon afterward several growers noticed spots on the fruit and foliage on the northwest sides of trees. This spotting was at first attributed to dust injury; but the injury became so serious that the Experiment Station pathologists were called for advice on May 29. We found it, to all appearances, typical bacterial spot but to be certain of the identification 19 spots from leaves, twigs and fruit were surface sterilized and dilution cultures made. Nearly all developed Bacterium pruni.

"Evidently the rain and wind washed the dust from the windward side leaving this side unprotected and wet just at the time that the peach is most liable to infection by B. pruni. Wherever the orchards were protected by a windbreak on the northwest side the trees were nearly free from disease."

Other recent reports on this disease are from Delaware, Mississippi, and Arkansas.

Delaware: First leaf infection May 19 on Elberta variety and fruit infection June 9 on Elberta and Carman. Heavy infection and defoliation only found in plantings where twig infection was serious last year. Infection of fruit is showing up from lesions on leaves and twigs. (Adams, July 1)

Mississippi: Generally severe throughout the state on young trees in an apparent low state of vitality. (Neal & Wedgworth, July 1)

Arkansas: A considerable amount of twig blight or cankers on peach seedlings has been noted. (Rosen, July 1)

REPORTS ON APPLE SCAB (VENTURIA INAEQUALIS)

Maine: Although initial infection was light and rainfall infrequent, with cool weather prevailing and leaf growth continuing late, abundant infection on the leaves has developed in the absence of careful spraying or dusting. (Folsom, July 15)

Virginia: First appearance at Blacksburg, May 26; Staunton, June 2. Occurs in very slight amounts in the middle and northern valley section and the Piedmont. A few cases of severe infection occur in southwestern section but these are chiefly in home orchards that were poorly sprayed. Loss in the commercial crop of the state will be very slight. (Fromme, July 15)

Minnesota: Very little scab present this year. Bare traces found in orchards in Faribault and Ramsey Counties. Most orchards inspected were found free from scab. In a nursery in Faribault County scab was abundant on Virginia crabs but not on other varieties. (Sect. Plant Path., July 15)

South Dakota: Common on apples both fruit and leaves. (Evans, July 15)

Colorado: The disease has been found in three different locations about Ft. Collins this summer. (Learn, July 1)

Washington: Heavy leaf infections from Snohomish May 18. Trips by Mr. Dana July 1 to 7 showed that scab was present in less amounts than usual in Pierce, King, Skagit, Snohomish, and Kitsap Counties. (Dept. Plant Path., July 1)

APPLE CEDAR RUST (GYMNOSPORANGIUM JUNIPERI-VIRGINIANAE)

Delaware: Heavy infection of leaves and fruit is in general evidence where this disease has been troublesome in past years. First observed June 24. (Adams, July 15)

Virginia: First appearance at Staunton, May 29; Winchester, May 30. Occurs in appreciable amounts only where red cedars are very near to apple trees. There is no general infection of consequence in commercial sections and losses will be slight. (Fromme, July 15)

South Carolina: Apparently general in the Piedmont but no serious infections observed. (Ludwig, July 15)

Minnesota: First observed June 8 in LeSueur County. Present locally in various places but not doing much damage. (Sect. Plant Path., July 1)

PERENNIAL CANKER OF APPLE AS REPORTED FROM WASHINGTON

"Perennial canker (Gloeosporium perennans) is present in varying amounts throughout eastern Washington from Walla Walla to British Columbia. Most severe in White Salmon district in connection with heavy winter injury. No reports from any points west of the Cascades. Fruit rot and cankers. Cankers 5 years old have been noted at Pullman, which indicates that the disease is not new to the region." (Dept. Plant Path., July 1)

APPLE BLIGHT (BACILLUS AMYLOVORUS)

Maryland: Very severe, much worse than last year. Quinces and pears also severely attacked. All of this has occurred in spite of a very dry spring, but as a result of the wet fall of last season which enabled the causal organism to overwinter in abundance. (Temple, July 10)

South Carolina: Observed in abundance in station orchards and also in other orchards in Oconee County. Mr. Fenner, who has been around the state more than I reports it general. At present it has taken the form of blight of twigs and spurs. Small cankers are present at the bases of many of the blighted spurs. (Ludwig, July 15)

Minnesota: Abundant in some orchards but more or less local due to weather conditions. Considerable damage being done where the orchards are cultivated and fertilized, but scarcely any damage in orchards under sod. (Sect. Plant Path., July 15)

Colorado: So far this season it has been reported from but one location; as to severity - nothing definite. (Learn, July 1)

APPLE MEASLES REPORTED FROM VIRGINIA

"About 100 trees in an orchard at Singer's Glen are affected, some quite seriously. The orchard has had good management and the measles seem to be largely responsible for the poor condition of the affected trees." (Fromme, July 15)

EFFECTS OF HOT WEATHER AND DROUTH ON APPLES

A number of reports and specimens have been coming in from various parts of the country indicating that drouth effects are occurring on fruit and trees and that there has been some scalding of fruit due to recent high temperatures.

STRAWBERRY YELLOWS REPORTED FROM SEVERAL STATES

A. G. Plakidas has recently reported on strawberry yellows as it occurs in California (Strawberry "Yellows" a degeneration disease of the strawberry. Phytopath. 16: 423-426. June 1926). On a recent trip to the Pacific Coast we had an opportunity to see this disease in destructive form. Also at Corvallis, Oregon, and at Ames, Iowa a few specimens of what appeared to be the same or a similar disease were observed. The following reports from collaborators are at hand. Those from Ohio and Wisconsin term the disease mosaic, and those from Colorado and California call it yellows.

Ohio: The disease which is being described in Ohio as the mosaic is showing up and is quite prevalent, causing a distinct loss through our strawberry section. (H. C. Young, July 1)

Wisconsin: Scattering in most beds. (Vaughan, July 1)

Colorado: This trouble has been reported from several locations in the state, but not at all severe. (Learn, July 1)

California: Continues to be serious throughout central coastal districts of California. Spreads rapidly through new fields of Banner, Marshall, and Oregon varieties and causes permanent stunting. Other varieties are affected but in varying degrees. (Horne, June 15)

STRAWBERRY BLACK ROOT

Reports of black root of strawberries are at hand from Michigan and Kansas. In general the cause of this disease is indefinite. In Kansas, however, the cases reported are attributed to a species of Rhizoctonia.

Michigan: Present in every place visited this spring and summer. All specimens sent in show the disease. A young plantation at Edmore showed 20 per cent loss of newly set plants due to black root. A one-year plantation at the same place showed about 15 per cent loss. In Berrien County the disease is present but loss is probably not over 10 per cent, although it may show up more in bearing plantations. A test plat at the College is showing 25 per cent killing of plants in fruit. (Strong, July 1)

Kansas: This disease is troublesome in the northeast part of the state and also in the irrigated sections in the west; often killing entire patches. First called to our attention this

year on May 29, from Garden City. The following week many reports from Doniphan and Atchison and Leavenworth Counties. (White, June 23)

MACROPHOMA STEM ROT OF BEAN AGAIN REPORTED FROM SOUTH CAROLINA

This disease, reported in the Plant Disease Reporter last year from South Carolina and in the same publication this year from Georgia, has again appeared in South Carolina. The following report, dated July 16, is from C. A. Ludwig:

> "The first complaint of the season from this state was received today. It is not abundant, however, in the section from which it was previously reported, doubtless because of the dry weather."

ROOTROT OF PEAS CAUSED BY VARIOUS ORGANISMS

The following reports on the general subject of pea root rots are at hand and are given for the information of pathologists.

Arkansas: Undetermined root rot sent in, reported as causing local damage. (V. H. Young, June 15)

Wisconsin: Fusarium sp. is less prevalent than last year. Found more in association with rootrot than last year. Aphanomyces euteiches is about as usual, widespread especially in old fields. More than last year at this time. (Vaughan, July 1)

Minnesota: Traces of Rhizoctonia rootrot found in fields of canning peas near LeSueur, May 21, (Sect. Plant Path., June 1)

South Carolina: All fields infected, total losses about 40 per cent. (Moore, June 15)

Connecticut: No complaints of any trouble this year. Have seen no trouble except one case of probable Fusarium root rot. (Clinton, July 15)

Colorado: Rootrot caused by Fusarium sp. has been reported in several pea-growing sections but in only one case has it been very severe, that was near Greeley. (Learn, July 15)

POWDERY MILDEW OF PEA (ERYSIPHE POLYGONI)

Two states report severe injury from the powdery mildew of garden pea.

In Missouri, W. A. Archer reports severe damage in Saline County, stating that farmers were finding it almost impossible to grow peas on account of powdery mildew. From Washington, the Department of Plant Pathology at Pullman writes that this mildew was very severe in the Puyallup Valley, completely ruining the later pickings in some plantings.

WATERMELON DISEASES IN ARIZONA

Harold R. Brisley of Clemonceau reports the following watermelon diseases under date of July 14:

Rootknot (Caconema (Heterodera) radicicola)

> "Root swellings formed much earlier than usual, so that in many instances crops have never reached the bearing age. Found mainly in fields where truck crops have been grown for several years consecutively."

Wilt (Fusarium niveum)

> "Present this year in about the same proportions as usual. Scattering plants killed in all localities."

Gummy stem blight (Mycosphaerella citrullina)

> "This is the first year that the disease has become apparent in this region. A field of one-half acre in Oak Creek Valley was found to have 15 per cent of the vines showing definite symptoms. Another field of one acre in the same locality had 5 per cent of the plants diseased."

ARIZONA AND OREGON REPORT ON YELLOW BLIGHT OF TOMATO

Arizona: Yellow blight (known locally as Western tomato blight). Growers report that this is the worst year in their experience, 75 per cent of the fields are a total failure in the Verde Valley. Of more than a dozen fields examined within the past week, none have better than a 50 per cent stand. One field of one-half acre had only 4 healthy plants remaining. Plants seeded in the field have been attacked in about the same severity as those transplanted. Shading the plants by interplanting with corn has had little beneficial effect. (Brisley, July 14)

Oregon: Severe and general this season. Serious losses. (Barss, July 15)